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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/199,723	11/25/1998	GRAHAM W. GLASS	073388.0110.	4018

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BAKER & BOTTS
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EXAMINER

LAO, SUE X

ART UNIT	PAPER NUMBER
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2126

DATE MAILED: 01/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/199,723

Applicant(s)

GLASS, GRAHAM W.

Examin r

S. Lao

Art Unit

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-- The MAILING DATE f this communicati n appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-7 are pending. This action is in response to the amendment filed 10/17/2003. Applicant has amended claim 1.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moons et al ("Object Migration in a Heterogeneous World – A Multi-Dimensional Affair") in view of La Porta et al (U S Pat. 6,085,086).

As to claim 1, Moons teaches a method (migration and object invocation) of forwarding messages (messages) to mobile objects (objects) in a computer network, comprising steps of:

Moving (move) a first object from a current position (old location) to a new position (new physical location) in the computer network;

Creating (install at old location) a forwarder object (signpost object);

placing information with respect to the new position at the forwarder object (set up a dialogue to the destination object);

receiving a message at the current position destined for the first object from a second object (invocation requests, messages);

re-routing the message from the forwarder object to the first object at the new position (signpost object rerouts/redirects requests to migrated object). See pages 70-71, section 6.1.

Moons does not teach (1) retaining an old version of the first object at the current position, nor (2) that the forwarder object is created from the old version of the first object at the current position in response to establishing the first object at the new position.

As to (1) and (2), La Porta teaches message passing to a mobile object (migrate a user process, Condor mechanism), wherein an old version of the mobile object is

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retained at a current position (parent user process), and a forwarder object (child stub process to store and to forward arriving messages) is created from (forked off) the old version of a mobile object (parent user process), in response to establishing the mobile object at a new position (after the migrated process has stabilized). Col. 5, lines 14-56; col. 8, lines 4-6; col. 8, line 23 - col. 9, line 3.

Therefore, it would have been obvious to retain an old version of the first object at the current position and to create the forwarder object from the old version of the first object in Moons in response to establishing the first object at the new position. One of ordinary skill in the art would have been motivated to combine the teachings of Moons and La Porta because this would have provided a message passing mechanism transparent to the user (La Porta, col. 3, lines 1-5), which is desirable to Moons (Moons, page 70, section 6.1, 1st para.).

4. Claims 5, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moons et al in view of La Porta et al as applied to claim 1 and further in view of Black et al (U S Pat. 5,325,524).

As to claim 5, Black teaches a forwarder is destroyed after routing the message to the first object (Through TAD updating, old TADS will be destroyed. Col. 6, lines 36-63). Therefore, it would have been obvious to destroy the forwarder object in Moons as modified after routing the message to the first object. The motivations to combine the teachings of Moons and Black includes providing a chain that can be followed to locate the mobile object (Black, col. 3, lines 1-4).

As to claim 6, Black teaches current and new positions are specified by host address corresponding to one or more computing devices (server addresses, col. 1, lines 34-55). It is noted that various port numbers are known to designate specific purposes such as requesting information or function execution. Therefore, it would have been obvious to include port numbers as well as host addresses into Moons as modified. Note discussion of claim 5 for a motivation to combine.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moons et al in view of La Porta et al as applied to claim 1 and further in view of SOM (SOMobject Developer's Toolkit Programmer's Guide, Volume I: SOM and DSOM).

As to claim 7, SOM teaches destroying both a forwarder object (proxy) and the underlying object (function somDestruct()) such that they have the same lifespan. Therefore, it would have been obvious that the forwarder object (proxy for the first object) of Moons is given the same lifespan as the first object. One would have been motivated to combine the teachings of Moons as modified with SOM because this would have enhanced object management both at development time and at run-time by using the SOM framework.

6. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moons et al in view of La Porta et al as applied to claim 1 and further in view of Black et al and Banda et al (U S Pat.5,396,630).

As to claims 2-4, Black teaches creating a reply message with information with respect to the new position (results returned with the best available TAD for future requests, col. 8 lines 1720; Fig. 4 step 15). Therefore, it would have been obvious to create a reply message with information with respect to the new position in Moons as modified. However, Moons as modified is silent on sending the reply message directly to the second object.

Banda teaches inter-object communication, wherein, after a communication path is established between two objects via an intermediate object (MD), subsequent messages are sent directly between the two objects without routing/re-routing through the intermediate object (col. 7, lines 4-25). Given the teaching of Banda, it would have been obvious to send a subsequent message directly to the first object without routing through the current position or the forwarder object (intermediate object) in Moons as modified. One of ordinary skill in the art would have been motivated to combine the teachings of Moons and Banda because this would have allowed communications across processes without having to produce new protocols for each additional process

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(Banda, col. 2, lines 9-13), which is desirable to support object/process migration in the heterogeneous environment of Moons.

7. Applicant's arguments filed 10/17/2003 have been considered but are moot in view of the new ground(s) of rejection. Applicant amended claims have added limitations not previously recited, thus, requiring a new grounds of rejection.

Regarding the amended "re-routing the message from the forwarder object", it is met by Moons (re-route requests by the signpost object). See rejection of claim 1 for a detailed discussion.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sue Lao whose telephone number is (703) 305-9657. A voice mail service is also available at this number. The examiner's supervisor, SPE Meng-Ai An, can be reached on (703) 305 9678. The examiner can normally be reached on Monday - Friday, from 9AM to 5PM. The fax phone number for the organization where this application or proceeding is assigned is (703) 872 9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

Sue Lao
January 5, 2004

